

In re Brian W. BAIRD, Art F. Diaz,  
William H. Dickstein and  
Charles M. Seymour.

No. 93-1262.

United States Court of Appeals,  
Federal Circuit.

Jan. 19, 1994.

Examiner's final rejection of claims of patent application, entitled "Flash Fusible Toner Resins," as unpatentable on ground of obviousness was affirmed by the Board of Patent Appeals and Interferences. Applicants appealed. The Court of Appeals, Lourie, Circuit Judge, held that: (1) fact that many diphenols specifically enumerated in prior reference were derivatives of bisphenol A did not establish that reference suggested selection of bisphenol A itself in preparation of flash fusible toner, and (2) given vast numbers of diphenols encompassed by generic diphenol formula in reference, and fact that diphenols that reference specifically disclosed to be typical, preferred, and optimum were different from and more complex than bisphenol A, reference did not teach or fairly suggest selection of bisphenol A in preparation of flash fusible toner.

Reversed.

#### 1. Patents $\Rightarrow$ 324.5, 324.55(2)

Federal Circuit Court of Appeals reviews obviousness determination by Board of Patent Appeals and Interferences de novo, while it reviews underlying factual findings for clear error.

#### 2. Patents $\Rightarrow$ 16.25

Prior reference did not provide requisite motivation for selection of bisphenol A in preparation of flash fusible toner comprising polyester of bisphenol A and aliphatic dicarboxylic acid, and thus, reference did not teach or fairly suggest selection of bisphenol A in preparation of toner resin so as to render claim 1 of patent application unpatentable on ground of obviousness, even though generic diphenol formula of reference encompassed bisphenol A and reference spe-

cifically disclosed three dicarboxylic acids recited in claim, given vast number of diphenols encompassed by generic diphenol formula in reference and fact that diphenols that reference specifically disclosed to be typical, preferred, and optimum were different from and more complex than bisphenol A. 35 U.S.C.A. § 103.

#### 3. Patents $\Rightarrow$ 314(5)

What reference teaches is question of fact.

#### 4. Patents $\Rightarrow$ 16.25

Fact that claimed compound may be encompassed by disclosed generic formula does not by itself render compound obvious and unpatentable. 35 U.S.C.A. § 103.

#### 5. Patents $\Rightarrow$ 16.25

Fact that many of the diphenols specifically enumerated in prior reference were derivatives of bisphenol A of which flash fusible toner of claim 1 for which applicant sought patent was comprised did not establish that reference suggested selection of bisphenol A itself in preparation of toner so as to render claim unpatentable on ground of obviousness. where, according to specification, diphenol in esters of claim could only be bisphenol A, and not bisphenol A derivative. 35 U.S.C.A. § 103.

#### 6. Patents $\Rightarrow$ 16.25

Disclosure of millions of compounds does not render obvious and unpatentable claim to three compounds, particularly when that disclosure indicates preference leading away from claimed compounds. 35 U.S.C.A. § 103.

John A. Brady, Lexmark Intern., Inc., Lexington, Kentucky, argued, for appellant.

Adriene B. Lepiane, Asst. Sol., Office of the Sol., Arlington, VA, argued, for appellee. With her on the brief were Fred E. McKelvey, Sol. and Richard E. Schafer, Associate Sol.

Before MICHEL, PLAGER and LOURIE, Circuit Judges.

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LOURIE, Circuit Judge.

Applicants Brian W. Baird, Art F. Diaz, William H. Dickstein, and Charles M. Seymour (collectively Baird)<sup>1</sup> appeal from the October 15, 1992 decision of the U.S. Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences, Appeal No. 92-0860, affirming the examiner's final rejection of claims 1-5 of application Serial No. 07/333,524, entitled "Flash Fusible Toner Resins," as unpatentable on the ground of obviousness under 35 U.S.C. § 103 (1988). We reverse.

### BACKGROUND

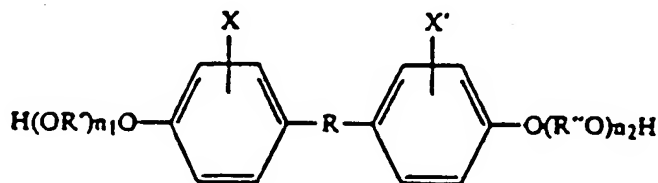
Baird's application is directed to a flash fusible toner comprising a polyester of bisphenol A and an aliphatic dicarboxylic acid. Synthesis of the toner compositions involves the acetylation of bisphenol A and the reaction of that product with an aliphatic dicar-

boxylic acid selected from the group consisting of succinic acid, glutaric acid, and adipic acid. The application discloses that toners containing bisphenol A have optimal characteristics for flash fusing including, *inter alia*, high thermal stability and low critical surface energy.

Claim 1, the only claim at issue, reads as follows:

1. A flash fusible toner comprising a binder resin which is a bisphenol A polyester containing an aliphatic di[carboxylic] acid selected from the group consisting of succinic acid, glutaric acid and adipic acid.

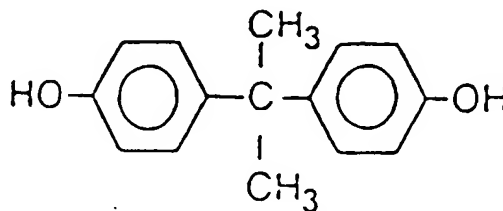
Claim 1 stands rejected as obvious over U.S. Patent 4,634,649 to Knapp et al., which relates to developer compositions comprised of, *inter alia*, the polymeric esterification product of a dicarboxylic acid and a diphenol of the following generic formula:



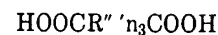
wherein R is selected from substituted and unsubstituted alkylene radicals having from about 2 to about 12 carbon atoms, alkylidene radicals having from 1 to 12 carbon atoms and cycloalkylidene radicals having from 3 to 12 carbon atoms; R' and R" are selected from substituted and unsubstituted alkylene radicals having from 2 to 12 carbon atoms, alkylene arylene radicals having from 8 to 12 carbon atoms and

arylene radicals; X and X' are selected from hydrogen or an alkyl radical having from 1 to 4 carbon atoms; and each n is a number from 0 (zero) to 4.

Col. 4, lines 16-38. The Knapp formula contains a broad range of variables and thus encompasses a large number of different diphenols, one of which is bisphenol A, which is shown in Baird's application as having the following structure:



Knapp also discloses that the dicarboxylic acids have the general formula:



1. The real party in interest is Lexmark International, Inc.

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wherein R'' is a substituted or unsubstituted alkylene radical having from 1 to 12 carbon atoms, arylene radicals or alkylene arylene radicals having from 10 to 12 carbon atoms and  $n_3$  is a number of less than 2.

Col. 5, lines 6-14. Twenty typical dicarboxylic acids are recited, including succinic acid, glutaric acid, and adipic acid, the dicarboxylic acids recited in claim 1.

The examiner rejected claim 1 as obvious on the ground that Knapp specifically discloses as components of his esters the three dicarboxylic acids recited in claim 1 and a generic formula which encompasses bisphenol A. Recognizing that bisphenol A is defined when certain specific variables are chosen, the examiner reasoned that bisphenol A "may be easily derived from the generic formula of the diphenol in [Knapp] and all the motivation the worker of ordinary skill in the art needs to arrive at the particular polyester of the instant claim [ ] is to follow [that formula]."

The Board upheld the examiner's rejection. It rejected Baird's argument that there was no motivation for one to select bisphenol A from Knapp and summarily concluded that "the fact that [the claimed] binder resin is clearly encompassed by the generic disclosure of Knapp . . . provides ample motivation for the selection of [the claimed composition]." Slip op. at 3. The Board's decision was affirmed on reconsideration.

#### DISCUSSION

[1] The only issue before us is whether the record supports the Board's conclusion that, in view of the teachings of Knapp, the claimed compounds<sup>2</sup> would have been obvious to one of ordinary skill in the art. We review an obviousness determination by the Board *de novo*, while we review underlying factual findings for clear error. *In re Beattie*, 974 F.2d 1309, 1311, 24 USPQ2d 1040, 1041 (Fed.Cir.1992).

[2] Baird does not dispute the fact that the generic diphenol formula of Knapp en-

compasses bisphenol A. Nor does Baird dispute that Knapp specifically discloses the three dicarboxylic acids recited in claim 1. Rather, Baird argues that there is no suggestion in Knapp to select bisphenol A from the vast number of diphenols covered by the generic formula and that the Board thus erred in concluding that the claimed compounds would have been obvious.

[3, 4] What a reference teaches is a question of fact. *Beattie*, 974 F.2d at 1311, 24 USPQ2d at 1041. The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious. *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed.Cir.1992) (rejecting Commissioner's argument that "regardless [ ] how broad, a disclosure of a chemical genus renders obvious any species that happens to fall within it"). *Jones* involved an obviousness rejection of a claim to a specific compound, the 2-(2'-aminoethoxy)ethanol salt of 2-methoxy-3,6-dichlorobenzoic acid (dicamba), as obvious in view of, *inter alia*, a prior art reference disclosing a genus which admittedly encompassed the claimed salt. We reversed the Board's rejection, reasoning that the prior art reference encompassed a "potentially infinite genus" of salts of dicamba and listed several such salts, but that it did not disclose or suggest the claimed salt. *Id.*

In the instant case, the generic diphenol formula disclosed in Knapp contains a large number of variables, and we estimate that it encompasses more than 100 million different diphenols, only one of which is bisphenol A. While the Knapp formula unquestionably encompasses bisphenol A when specific variables are chosen, there is nothing in the disclosure of Knapp suggesting that one should select such variables. Indeed, Knapp appears to teach away from the selection of bisphenol A by focusing on more complex diphenols, including 2,2-bis(4-beta-hydroxyethoxyphenyl)propane, 2,2-bis(4-hydroxypropoxyphenyl)propane, and 2,2-bis(4-hydroxyisopropoxyphenyl)propane. Col. 4, lines 51-64. Knapp teaches that in preferred diphenols, R

2. Since the toner, the resin, and the polyester compounds appear to be treated in the Board opinion and patent application as synonymous,

and the PTO has premised its obviousness rejection on the obviousness of the compounds, we will treat this case accordingly.

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enol A. Nor does Baird specifically disclose the acids recited in claim 1. It suggests that there is no suggestion to select bisphenol A from the group of diphenols covered by the claim and that the Board thus erred in finding that the claimed compound has been obvious.

The reference teaches is a question, 974 F.2d at 1311, 24

The fact that a claimed compound is encompassed by a formula does not by itself make it obvious. *In re Jones*, 50, 21 USPQ2d 1941, 1943 rejecting Commissioner's argument regardless of how broad, a chemical genus renders obvious that happens to fall within a specific compound, the 2-(2'-nol salt of 2-methoxy-3,6-dicamba), as obvious in *Id.*, a prior art reference which admittedly encompassed salt. We reversed the reasoning that the prior art encompassed a "potentially infinite" number of dicamba and listed salts but that it did not disclose claimed salt. *Id.*

In this case, the generic diphenol in Knapp contains a large number of compounds, and we estimate that it contains more than 100 million different compounds of which is bisphenol A. The formula unquestionably encompasses bisphenol A when specific variations here is nothing in the disclosure suggesting that one should select a particular compound. Indeed, Knapp away from the selection of focusing on more complex compounds such as 2,2-bis(4-beta-hydroxyphenyl)propane, 2,2-bis(4-hydroxyphenyl)propane, and 2,2-bis(4-hydroxyisopropyl)propane. Col. 4, lines 51-64. It is in preferred diphenols, R

premised its obviousness rejection of the compounds, we accordingly.

has 2 to 4 carbon atoms and R' and R" have 3 to 4 carbon atoms, and in "optimum" diphenols, R is an isopropylidene radical, R' and R" are selected from the group consisting of propylene and butylene radicals, and n is one. Col. 4, lines 38-47. Knapp further states that the diphenol in the preferred polyester material is 2,2-bis(4-hydroxyisopropoxyphenyl)propane. Col. 5, lines 36-38. Fifteen typical diphenols are recited. None of them, or any of the other preferred diphenols recited above, is or suggests bisphenol A.

[5] The Commissioner repeatedly emphasizes that many of the diphenols specifically enumerated in Knapp are derivatives of bisphenol A. He argues that Knapp thus suggests the selection of bisphenol A itself. We disagree, because, according to the specification, the diphenol in the esters of claim 1 can only be bisphenol A, not a bisphenol A derivative. While Knapp may suggest certain complex bisphenol A derivatives, it does not describe or suggest bisphenol A and therefore does not motivate the selection of bisphenol A.

[6] "[A] reference must be considered not only for what it expressly teaches, but also for what it fairly suggests." *In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979). Given the vast number of diphenols encompassed by the generic diphenol formula in Knapp, and the fact that the diphenols that Knapp specifically discloses to be "typical," "preferred," and "optimum" are different from and more complex than bisphenol A, we conclude that Knapp does not teach or fairly suggest the selection of bisphenol A. See *In re Bell*, 991 F.2d 781, 26 USPQ2d 1529 (Fed.Cir.1993) (DNA sequence would not have been obvious in view of prior art reference suggesting a nearly infinite number of possibilities and failing to suggest why among all those possibilities one would seek the claimed sequence). A disclosure of millions of compounds does not render obvious a claim to three compounds, particularly when that disclosure indicates a preference leading away from the claimed compounds.

## CONCLUSION

The Board clearly erred in finding that Knapp would have provided the requisite motivation for the selection of bisphenol A in the preparation of the claimed compounds. Accordingly, the decision of the Board affirming the rejection of claim 1 as obvious over Knapp is reversed.

## COSTS

No costs.

**REVERSED**



TRANSPAC DRILLING VENTURE, 1983-63 by CRESTWOOD HOSPITALS, INC., Transpac Drilling Venture, 1983-1 by Crestwood Hospitals, Inc., Transpac Drilling Venture, 1983-2 by James M. Dobbins, Transpac Drilling Venture, 1983-4 by Bryan D. Burr, Plaintiffs-Appellants,

and

Transpac Drilling Venture, 1983-14, by Alister Corporation, Transpac Drilling Venture, 1983-38 by Lindsey & Hall, Inc., Plaintiffs,

v.

UNITED STATES, Defendant-Appellee.

No. 93-5045.

United States Court of Appeals,  
Federal Circuit.

Feb. 8, 1994.

Government moved to dismiss petitions for readjustment filed by partnerships. The United States Claims Court, Margolis, J., 26 Cl.Ct. 1245, dismissed petitions, and partnerships appealed. The Court of Appeals, Nies, Chief Judge, held that: (1) partners who became general partners for limited purpose

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